

Section II. REMARKS

The pending claims in the application are 1-4, 6-32 and 34-40.

Claim Objections, and Prospectively Allowable Subject Matter

Claims 16, 19 and 23-28 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Accordingly, applicants have rewritten claims 16, 19, 23, 24, 27 and 28 in independent form, including all of the limitations of the base claim and any intervening claims, as claims 35-40, respectively. Allowance of claims 35-40 therefore is respectfully requested.

Rejection of Claims and Traversal Thereof

In the September 12, 2003 Office Action:

claims 1, 5, 11-15, 17-18, 20, 22 and 29-34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kinney et al. (U.S. Patent No. 3,892,197) in view of Louder et al. (U.S. Patent No. 4,141,312);

claims 6-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kinney et al. and Louder et al., and further in view of Pickett (U.S. Patent No. 3,972,350);

claims 1, 2, 5, 11-15, 17-18, 20, 22 and 29-34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama (U.S. Patent No. 4,834,943) in view of Louder et al.;

claims 3 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama and Louder et al., and further in view of Schmehl (U.S. Patent No. 5,354,370);

claims 6-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama and Louder et al., further in view of Pickett;

claims 18, 20 and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kinney et al. in view of Louder et al., further in view of Rasmussen et al. (U.S. Patent No. 4,844,870) and/or Petschek et al. (U.S. Patent No. 5,389,339); and

claims 18, 20 and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama in view of Louder et al., further in view of Rasmussen et al. and/or Petschek et al.

These rejections are hereby traversed in application to pending claims 1-4, 6-32 and 34-37, as amended herein. The various grounds of rejection are addressed in turn below.

Rejection under 35 U.S.C. §103(a)

1. In the September 12, 2003 Office Action, the Examiner rejected claims 1, 5, 11-15, 17-18, 20, 22 and 29-34 under 35 U.S.C. §103(a) as being unpatentable over Kinney et al. (U.S. Patent No. 3,892,197) (hereinafter Kinney '197) in view of Louder et al. (U.S. Patent No. 4,141,312) (hereinafter Louder '312).

Such rejection is traversed in application to amended claim 1, and claims 5, 11-15, 17-18, 20, 22 and 29-34 dependent thereunder.

Applicants' amended claim 1 recites, *inter alia*:

“a fluid transporting system communicatively connected with the retort chamber, said fluid transporting system comprising a selector for selectively connecting the retort chamber with any one of the wax containers or the reagent containers, wherein said selector for selectively connecting the retort chamber with any one of the wax containers or the reagent containers comprises a rotary valve, and said rotary valve is (1) in fluid communication with the retort chamber and each of the wax containers and reagent containers, (2) positioned between the retort and the wax containers, and (3) positioned between the retort and the reagent containers” (emphasis added)

Such arrangement is shown, for example, in Figure 2 of the application, reproduced in pertinent part below, wherein tissues are processed in the retort chamber **205**, and the rotary valve **202** is positioned in fluid communication with and between the retort chamber **205** and the respective arrays of reagent containers **207** and wax containers **204**.

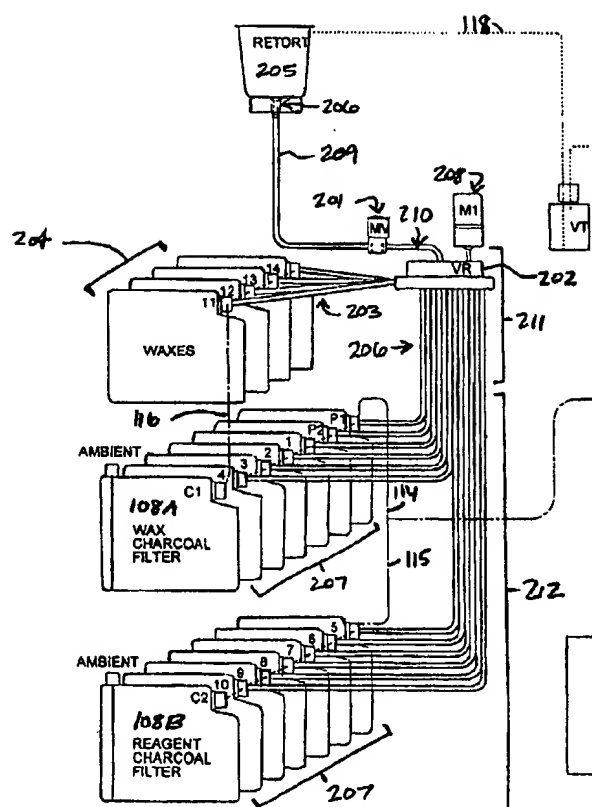


Fig. 2, instant application

Kinney '197 relates to a tissue processing system that provides a plurality of containers of treating fluids, including paraffin, in which the fluids are drawn to a sealed processing chamber by vacuum and returned by pressure that is applied to the chamber. For ease of reference, Figure 2 of Kinney '197 has been recreated below.

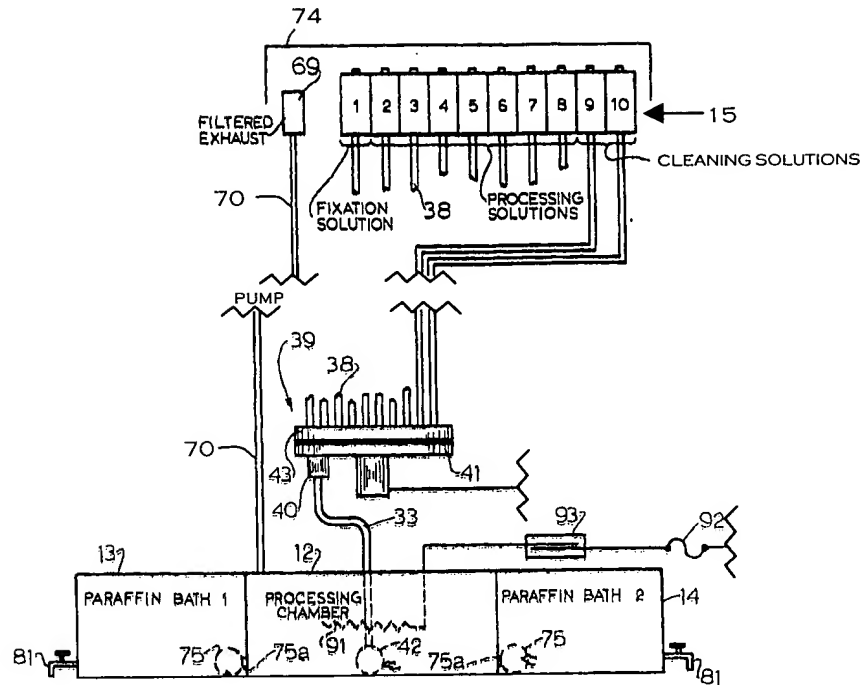


Fig. 2 of Kinney `197

In the illustrated system of Kinney '197, the rotary valve 39 is in fluid communication with the processing chamber 12 and the processing solutions 15. However, transport of liquid paraffin from either of paraffin containers 13 and 14 to chamber 12 is accomplished by use of valves 75, 75'. As such, the rotary valve 39 of Kinney '197 is not in fluid communication with and positioned between the processing chamber 12 and the paraffin containers 13 and 14.

As such, Kinney '197 fails to teach or suggest applicants' claimed invention, which requires, *inter alia*,

“wherein said selector for selectively connecting the retort chamber with any one of the wax containers or the reagent containers comprises a rotary valve, and said rotary valve is (1) in fluid communication with the retort chamber and each of the wax containers and reagent containers, (2) positioned between the retort and the wax containers, and (3) positioned between the retort and the reagent containers” (claim 1, as amended).

Moreover, Kinney '197 teaches away from the passage of paraffin from the rotary valve to the processing chamber.

Referring to Figure 2 of Kinney '197, following passage through the rotary valve 39, the processing solutions pass through common conduit 33 to the processing chamber 12 through valve 42. According to Kinney '197, the valve 42 must be closed during paraffin processing so that "there is minimum opportunity for the paraffin to block valve 42" (see Kinney '197, col. 5, lines 42-44). Obviously, passing paraffin through valve 42, e.g., from the rotary valve 39 to the processing chamber 12, would have an equally detrimental effect on the valve 42 and thus the Kinney '197 processor.

As such, not only does Kinney '197 fail to teach or suggest the tissue processor of applicants' claim 1, Kinney '197 also **teaches away from** placing the rotary valve in fluid communication with and between the retort chamber and each of the wax containers.

Louder '312 does not cure such deficiency of Kinney '197. Louder '312 relates to a tissue processing system for fixing, dehydrating, clearing and paraffin infusing tissue samples. For ease of reference, Figure 1 of Louder '312 has been recreated below.

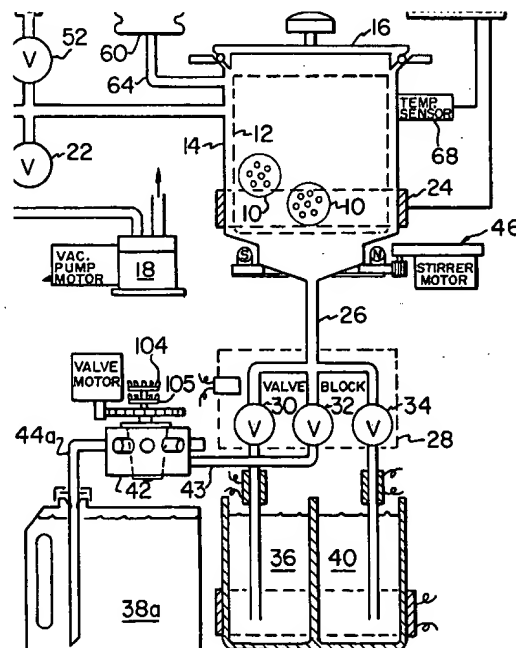


Fig. 1 of Louder '312

Referring to Figure 1 of Louder '312, the tissue processing chamber 14 is adapted to be sealed against the atmosphere and the flow of liquid from the solvent baths 38a and paraffin baths 36 and 40 into and out of the tissue processing chamber 14 is controlled by a pressure controlled means 18. A rotary valve 42 is provided between the solvent baths 38a and the tissue processing chamber 14. Louder '312, however, fails to teach or suggest an arrangement

“wherein said selector for selectively connecting the retort chamber with any one of the wax containers or the reagent containers comprises a rotary valve, and said rotary valve is (1) in fluid communication with the retort chamber and each of the wax containers and reagent containers, (2) positioned between the retort and the wax containers, and (3) positioned between the retort and the reagent containers”

as required by applicants' amended claim 1.

Further, Louder states:

“[t]he molten paraffin contained in bath nos. 36 and 40 are drawn into the tissue container when the rotary valve is at the final stations 11 and 12, but not through the rotary valve” (see Louder '312, col. 6, lines 54-57) (emphasis added).

As such, Louder '312 **also teaches away** from the arrangement of applicants' claimed invention.

Therefore, even if one were to combine the teachings of Kinney '197 and Louder '312 (though there is nothing in such references that would motivate such combination), the combination would still not provide, suggest or extrapolate to applicants' claimed invention. Applicants' claimed invention embodies a substantial reduction in the mechanical complexity that is characteristic of prior art fluid transporting systems for tissue processing, and the prior art is devoid of any derivative basis for such improvement.

Based on all of the foregoing, applicants respectfully request that the §103 rejection of claims 1, 5, 11-15, 17-18, 20, 22 and 29-34 over Kinney '197 in view of Louder '312 be withdrawn.

2. In the September 12, 2003 Office Action, the Examiner rejected claims 6-10 under 35 U.S.C. §103(a) as being unpatentable over Kinney '197 in view of Louder '312 as applied to claim 5 above, and further in view of Pickett (U.S. Patent No. 3,972,350) (hereinafter Pickett '350).

Applicants traverse such rejection.

Pickett '350 describes a rotary valve that sequentially connects a plurality of fluid inlet lines to a single fluid outlet line.

As discussed in the preceding section, the combination of Kinney '197 in view of Louder '312 fails to teach or suggest applicants' claimed invention,

“wherein said selector for selectively connecting the retort chamber with any one of the wax containers or the reagent containers comprises a rotary valve, and said rotary valve is (1) in fluid communication with the retort chamber and each of the wax containers and reagent containers, (2) positioned between the retort and the wax containers, and (3) positioned between the retort and the reagent containers”

and the further inclusion of Pickett '350 does not cure the deficiencies of such combination of Kinney '197 and Louder '312.

Pickett '350, like Kinney '197 and Louder '312, teaches away from passing paraffin through a rotary valve. As stated in Pickett '350 (see Figure 1 of Pickett '350, recreated below for ease of reference), the rotary valve 10 “is not operable during paraffin embedding of the tissue in chamber 17 . . .” (see Pickett '350, col. 4, lines 41-42).

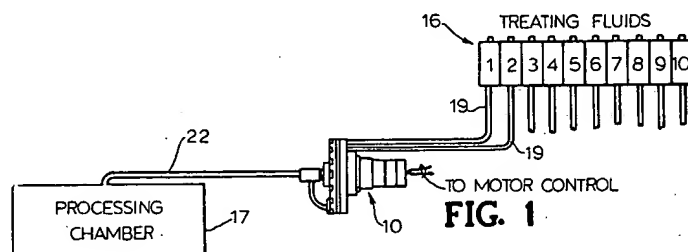


Fig. 1 of Pickett '350

Thus, the combination of Pickett '350 with Kinney '197 and Louder '312 fails to teach or suggest applicants' claimed invention and in fact Pickett '350 teaches away from applicants' claimed invention.

Applicants traverse this rejection.

Figure 1 of Yoshiyama illustrates a reagent housing comprising three chambers **4**, **5** and **6** which accommodate fixing solutions **7a**, dehydrating solutions **7b** and resin **7c**, respectively. To process tissue, a delivery pump **13** forces reagents from containers **7a**, **7b** and **7c** into the embedding box holder **15** via the reagent selection mechanism **9**.

Yoshiyama fails to teach or suggest applicants' claimed invention,

“wherein said selector for selectively connecting the retort chamber with any one of the wax containers or the reagent containers comprises a rotary valve, and said rotary valve is (1) in fluid communication with the retort chamber and each of the wax containers and reagent containers, (2) positioned between the retort and the wax containers, and (3) positioned between the retort and the reagent containers;

multiple heating elements for heating the retort chamber, the wax storage chamber, and all or any parts of the fluid transporting system”

as recited in applicants' claim 1, from which all other rejected claims directly or indirectly depend.

As discussed hereinabove Louder '312 teaches away from passing paraffin through a rotary valve. In contrast, Yoshiyama teaches the passage of a low-melting temperature resin, e.g., at 37°C, through a reagent select mechanism 9 comprising male 11 and female 10 coupling members from a resin container 7c to the tissue processor 15. Because of their contrary teachings, one skilled in the art considering the Yoshiyama and Louder '312 references would not be motivated to combine them in the proposed manner.

In this respect, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). There is no motivation, suggestion or basis in Yoshiyama or Louder '312 to combine the two references, and in fact Louder '312 teaches away from any combination of the two references.

The Examiner therefore is respectfully requested to withdraw the rejection of claims 1, 2, 5, 11-15, 17-18, 20, 22 and 29-34 under 35 U.S.C. §103(a) based on Yoshiyama in view of Louder '312.

4. In the September 12, 2003 Office Action, the Examiner rejected claims 3-4 under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama in view of Louder '312 as applied to claims 1-2 above, and further in view of Schmehl (U.S. Patent No. 5,354,370).

Applicants traverse such rejection.

Schmehl describes a tissue processor including a process chamber, at least one liquid reservoir and at least one auxiliary reservoir connected between the process chamber and such at least one liquid reservoir. During processing, the liquid from the at least one liquid reservoir is driven via a manifold to the auxiliary reservoir, and from the auxiliary reservoir to the process chamber.

As discussed hereinabove, Yoshiyama in view of Louder '312 does not render applicants' claimed invention obvious because Louder '312 teaches away from combining the teachings of the two references. The further inclusion of Schmehl, which does not teach a rotary valve in fluid communication with and between the retort chamber and the wax containers, does not cure the deficiencies of Yoshiyama in view of Louder '312.

Applicants therefore respectfully request that the rejection of claims 3 and 4 under 35 U.S.C. §103(a) based on Yoshiyama, Louder '312 and Schmehl be withdrawn.

5. In the September 12, 2003 Office Action, the Examiner rejected claims 6-10 under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama in view of Louder '312 as applied to claim 5 above, and further in view of Pickett '350.

Applicants traverse such rejection.

As discussed hereinabove, both Louder '312 and Pickett '350 teach away from a rotary valve in fluid communication between a retort chamber and wax containers. Accordingly, one skilled in the art would not be motivated to combine the Yoshiyama teaching with either the Louder '312 or Pickett '350 teachings.

Because both Louder '312 and Pickett '350 teach away from combination of the cited references, applicants respectfully request that the rejection of claims 6-10 under 35 U.S.C. §103(a) based on Yoshiyama, Louder '312 and Pickett '350 be withdrawn.

6. In the September 12, 2003 Office Action, the Examiner rejected claims 18, 20 and 21 under 35 U.S.C. §103(a) as being unpatentable over Kinney '197 in view of Louder '312 as applied to claim 1 above, and further in view of Rasmussen et al. (U.S. Patent No. 4,844,870) (hereinafter Rasmussen) and/or Petschek et al. (U.S. Patent No. 5,389,339) (hereinafter Petschek).

Applicants traverse such rejection.

Rasmussen describes liquid handling systems for handling reagents and the like in the analysis of biological fluids, involving monitoring of liquid levels.

Petschek relates to an integral biomolecule preparation device which accomplishes nucleic acid separation steps, including centrifugation, reagent addition, and pipeting, automatically and without human intervention, as a fully automated DNA separation system.

As discussed hereinabove, Kinney '197 in view of Louder '312 does not provide any derivative basis for applicants' claimed invention. The further inclusion of Rasmussen and/or Petschek, as a source of teaching of sensors, does not cure the deficiencies of Kinney '197 in view of Louder '312.

Accordingly, applicants respectfully request that the rejection of claims 8, 20 and 21 under 35 U.S.C. §103(a) based on Kinney '197, Louder '312 and Rasmussen and/or Petschek be withdrawn.

7. In the September 12, 2003 Office Action, the Examiner rejected claims 18, 20 and 21 under 35 U.S.C. §103(a) as being unpatentable over Yoshiyama in view of Louder '312 as applied to claim 1 above, and further in view of Rasmussen and/or Petschek. Applicants traverse such rejection.

As discussed hereinabove, Yoshiyama in view of Louder '312 does not render applicants' claimed invention obvious and Louder '312 in fact teaches away from combining the two references.

The further inclusion of Rasmussen and/or Petschek, as a source of teaching of sensors, does not cure the deficiencies of Yoshiyama in view of Louder '312.

Accordingly, applicants respectfully request that the rejection of claims 8, 20 and 21 under 35 U.S.C. §103(a) based on Yoshiyama, Louder '312 and Rasmussen and/or Petschek be withdrawn.

Based on all of the foregoing, all pending claims 1-4, 6-32 and 34-40 are free of the art and of patentable character.

Fees Payable for Added Claims 35-40

Six (6) independent claims have been added herein, increasing the number of independent claims by four and the total number of claims by six, beyond the numbers of claims for which payment previously was made. Accordingly, an added claims fee of $(4 \times \$43.00) + (6 \times \$9.00) = \$226.00$ is due.

The added claims fee of \$226.00 is authorized to be charged in the enclosed Credit Card Authorization Form.


If any additional fee or charge is determined to be properly payable in connection with the entry of this Amendment, the Commissioner hereby is authorized to charge same to Deposit Account Number 08-3284 of Intellectual Property/Technology Law.

CONCLUSION

Upon entry of this Amendment, claims 1-4, 6-32 and 34-40 are now in form and condition for allowance. The Examiner therefore is respectfully requested to allow such claims, as herein amended/added.

If any issues remain outstanding, incident to the formal allowance of the application, the Examiner is requested to contact the undersigned attorney at (919) 419-9350 to discuss same, in order that this application may be passed to issue at an early date.

Respectfully submitted,



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